

H/D

Notice of Allowability

Application No.

10/764,497

Examiner

Fayez G. Assaf

Applicant(s)

SHIOZAKI ET AL.

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Response filed 07/27/2005 and the phone interview which occurred on 08/10/2005.
2. ☒ The allowed claim(s) is/are 30-46.
3. ☒ The drawings filed on 11 August 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 10/06/04; 08/11/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Art Unit: 2872

DETAILED ACTION

Election/Restrictions

Applicant's election of Species II of Group I: claims 30-46, in the reply filed on 07/27/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without** traverse (MPEP § 818.03(a)).

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Arthur J. Steiner on 08/10/2005.

The application has been amended as follows:

Claims 1 through 29 have been cancelled.

30. (Currently Amended) A diffraction grating element, comprising:

Art Unit: 2872

given first-fourth planes disposed parallel with each other in order, a first medium having an {index of refraction n_1 } provided at the outer side than the first plane being in contact with the first plane,

a second medium having an {index of refraction n_2 } and a third medium having an {index of refraction n_3 , $n_3 < n_2$ } disposed alternately in a predetermined direction parallel with the first plane between the second plane and the third plane being in contact with the second plane and the third plane to constitute a diffraction grating,

a fourth medium having an {index of refraction n_4 } provided at the outer side than the fourth plane being in contact with the fourth plane,

a fifth medium having an {average index of refraction n_5 } provided between the first plane and the second plane being in contact with the first plane and the second plane, and

a sixth medium having an {average index of refraction n_6 } provided between the third plane and the fourth plane being in contact with the third plane and the fourth plane, wherein

given that an average index of refraction between the second plane and the third plane is n_{av} , the average index of refraction n_5 of the fifth medium satisfies a relational expression of " $n_1 < n_5 < n_{av}$ " or " $n_{av} < n_5 < n_1$ ", and the average index of refraction n_6 of the sixth medium satisfies a relational expression of " $n_4 < n_6 < n_{av}$ " or " $n_{av} < n_6 < n_4$ ".

Claims 47 through 78 have been cancelled.

Art Unit: 2872

Reasons for Allowance

Claims 30-46 are allowable for the reason that the prior art fails to teach or reasonably suggest given that an average index of refraction between the second plane and the third plane being n_{av} , the average index of refraction n_5 of the fifth medium satisfies a relational expression of " $n_1 < n_5 < n_{av}$ " or " $n_{av} < n_5 < n_1$ ", and the average index of refraction n_6 of the sixth medium satisfies a relational expression of " $n_4 < n_6 < n_{av}$ " or " $n_{av} < n_6 < n_4$ " as set forth in the claimed combination.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Knop et al. (US 4,484,797)

Kawasaki et al. (US 2004/012544 A1)

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2872

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307. The examiner can normally be reached on 8-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Fayez G. Assaf
Primary Examiner
Art Unit 2872

8/11/2005